

"THE OBSERVATORY"

A FEATURETTE OF IDEAS - FALL SEMESTER

"The world, be as it may, is an incredible 3-dimensional space projected onto our corneas. Without the proper training, education and tools, what is 3-dimensional and massively complex will forever remain flat, limited and unexplored." - Joey Lovato

Written by Joey Lovato

Cast

JOEY - Myself: A student in IDEAS

CURISOITY - A youthful man with a keen sense of wonder - A representation of my curiosity evoked by IDEAS

CREATIVITY - A free spirited man with flowing hair; a representation of my creativity evoked by IDEAS

REFLECTION - An old librarian with glasses; a representation of my connection to the *history* of ethics, value and design through IDEAS, and the benefit of reflecting upon previous work.

INTRODUCTION

FADE IN:

Arial shot of observatory atop hill. Cascade inward towards dome.

JOEY

My observatory: A place constructed out of the experiences of my life. It is where I observe, analyze, communicate and create. IDEAS has granted me the opportunity to explore my own observatory, as well as further build upon the instruments inside. The stories that follow are a metaphorical series designed to represent the development of my own mind and heart as I traversed IDEAS. Each scene accounts for a certain aspect of the class in which I was enlightened, and features assignments, IDEAS Journal entries and other materials which show who I was, who I became, and the malleable student in between.

Allowing myself to be open to the new ways of thinking proposed by IDEAS was not always easy, as the following scenes will show. But, with every struggle I overcame and every perspective I gained, I became a more involved member of the IDEAS community. I truly feel that the relationships I built this semester, between professors, peers and team mates is what propelled me through IDEAS. Personally, the non-technical side of engineering, which IDEAS has revealed to me, involves concepts difficult for me to grasp. I have been taught by society that engineering is for those who do not communicate well, yet have astounding

technical capabilities. But, being a citizen of the IDEAS community for this past semester has taught me the exact opposite. It is with my voice and my communication skills that I will truly change the world, as these two abilities are what allow me to express my ideas and collaborate with others.

My observatory is my own mind. Before IDEAS, I thought that my observatory was fully functioning. I believed that I had harnessed the power of all of my observation and analytical tools. However, IDEAS has shown me that I can make my observatory more versatile, more advanced, and more defined by my own character. I will now take you on a journey of my first semester of IDEAS: A challenging, yet shutter-opening experience.

SCENE I - THE MIRROR

FADE IN:

INTERIOR OBSERVATORY ATOP HILL - NIGHT

JOEY stands in the empty observatory, gazing out onto the world. CURIOSITY approaches.

JOEY

The world is so beautiful. When can I begin to truly explore it?

CURIOSITY

In due time, Joey. I want you to be curious, but you cannot truly view the world unless you know yourself.

JOEY

I already know myself. In fact, I'd rather not delve into who I am with you. I only want to *learn*.

CURIOSITY

Joey, you cannot *learn* about the world around you until you become vulnerable and show me that you can learn more about yourself. Look within.

CURIOSITY points to JOEY's heart and looks him in the eyes then turns around, walking across the marble floor of the observatory.

CURIOSITY

Follow me. I would like to show you something.

CURIOSITY leads JOEY down the marble staircase, into the depths of the observatory: the heart. He brings JOEY to a mirror in the middle of a dark room.

CURIOSITY

Look into the mirror, Joey.

JOEY

I can't. I can't look at myself. All I see
is a shy stutterer.

CURIOSITY

Maybe so, but look deeper. What really
defines you?

JOEY

[Shedding tears] Who am I?

DISOLVE TO:

INTERIOR OBSERVATORY - DAY

Joey approaches CURIOSITY, handing him the following:

Proceed to following page -->

Joey Lovato

Professor Lefton and Professor Mattjik (Section B)

HNRS 105 (IDEAS)

September 23rd, 2017

Autobiography of Place
Tracing the Pattern of Wood Grain

My voice was not given to me at birth. I had to find it. The search began in an exterior room in a stark office building, where the afternoon sun would glaze the metal blinds. The room was quaint, with a few large bookcases filled with picture books, novels, and board games. The windows stretched across the wall opposite of the door. The walls were a soft white and homely due to their familiarity. A round table with webbed wooden slates sat perfectly in the middle of the room.

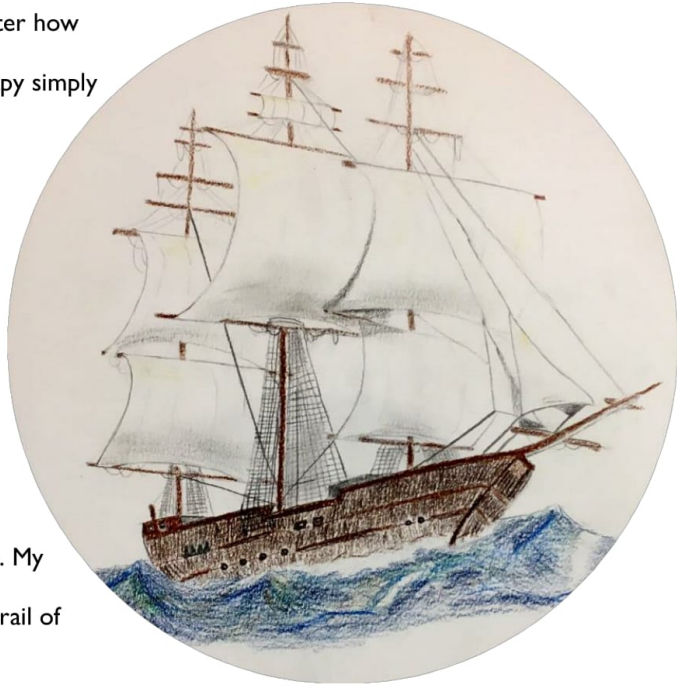
This room belonged to my speech therapist, whose kind demeanor always graced the room amiably. Turquoise jaded earrings dangled from her ears under her styled, short white hair. The smell of the entanglement of her perfume with the scent of the carpet and walls is still as vivid in my memory as her face.

This is where I went to speech therapy for my stutter. I can construct that room in my mind to this day, with every book, every game, and every grain of wood on the table. I memorized the room as a distraction: a distraction from the purpose of the room, which was to overcome my stutter. I truly hated stuttering, especially at the young age of twelve. Despite the love and support that my speech therapist offered me every week, that room still evoked a horrific sense of self-deprivation. Every time I sat down at that table, a question which I had asked myself for many years would overcome my stream of conscience: Will I always s- s- s- stutter? An instinctual fear of stuttering, cut so deeply into my being that I did not know life

without it, would spill out of me onto the table and the carpet and up the walls.

That room, in the back of my speech therapist's office, had been the vessel in which I sailed across a stormy sea; a ship floating on the choppy waters of my own fluency. Every week, I had to board that ship and face the storm. But, I was feeble. I did not know how to captain that ship.

There was a day when no matter how intensely I concentrated, speech therapy simply wasn't working. I felt a glob of sticky tension in my neck and jaw. I was terrorized by a sense of helplessness as words fumbled out of my mouth. So, I looked down, avoiding eye contact with my speech therapist, avoiding my stutter, and I traced the pattern of the wood grain of the table. My finger ran along every fiber, leaving a trail of translucent oil on the wood varnish.



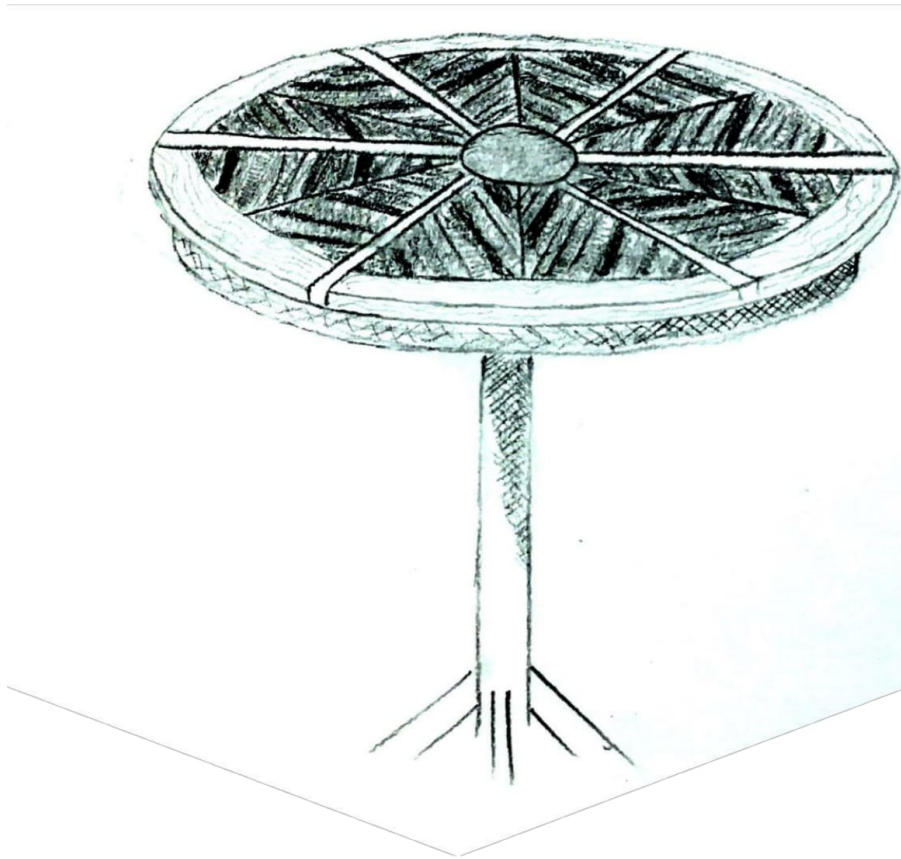
Lovato, Joseph. *My Voice*. 2017 *

Rain consumed me, the sails flapped frantically, and the wooden boards of the hull c- c- c- creaked. I ran under the deck, where I could be safe. I balled up in a corner and traced the pattern of the wood grain on the hull.

For years, I was the passenger on a sinking ship, which I realized was my own sinking ship. The room which was constructed as a place for me to overcome my stutter would not foster success unless I allowed it to. My speech therapist could help navigate with her maps and wisdom as a speech pathologist, but she could not take the wheel. Despite my own loss of self-confidence, I had to learn to captain my own ship.

That day, while tracing the pattern of the wood grain, the room began to speak to me. The creaking of the walls, the bowing of the masts, the soft voice of my navigator, all evoked a feeling of anguish because I knew I was anchored by my own willpower. I couldn't face the storm and the notion of stuttering for the rest of my life. My speech therapist knew that something was wrong when tears filled my eyes and streamed down my face. The strong waters of the storm were leaking into the hull. I began crying audibly as the tide of emotions in my soul overflowed into the room. She too began to cry, in sympathy and possibly in admiration for my vulnerability. That day was an inflection point in my life. It was the day in which I finally climbed out of the hull of my ship. My speech therapist pulled me on deck, out of the depths of my own dark and vicious mind. She held onto me in the frenzy, took me by my shoulders, looked directly into my eyes with hers and said, "Let's find your voice!" I took the helm of the ship, spun the wheel and began sailing out of the storm. I stuttered in front of my family, in front of my family, and in class. I withheld the urge to replace words with those in which I would not stutter. I used techniques to relax my voice. I became a true stutterer, instead of one hidden behind a mask. Soon after, I became fluent.

In the past few years, my stutter has returned due to its cyclical nature. While I have not gone back to my speech therapist's office, I still meet with her occasionally to seek guidance. She usually asks me to look back at my own experiences as a stutterer, which are my own maps, to navigate these new waters. As I found new friends in college, I returned to old habits, and put on my mask. I added unnecessary noises and "um's" to my speech. I stopped making eye contact with even close friends, as I felt them looking into my true, stuttering self. I am tracing the pattern of the wood grain back in her office once again, distracting myself from my stutter. Instead, I must lift up my finger, use my voice, and stutter instead.



CURIOSITY

This is wonderful, Joey. I am overjoyed by your ability to self-reflect. I think you are ready now to look [with a pause], outward.

FADE OUT:

SCENE 2 - SENSE

FADE IN:

INTERIOR OBSERVATORY - DAY

CREATIVITY is setting up the first instrument in the observatory, a telescope.

JOEY

I am ready to look outward! [Stepping up to the telescope]

CURIOSITY

I know you are, but remember that simply viewing the world is miniscule in comparison to *sensing* the world. Anne Dillard told us this is detail.

JOEY

I understand. I must use all of my senses instead of just my eyes.

CURIOSITY

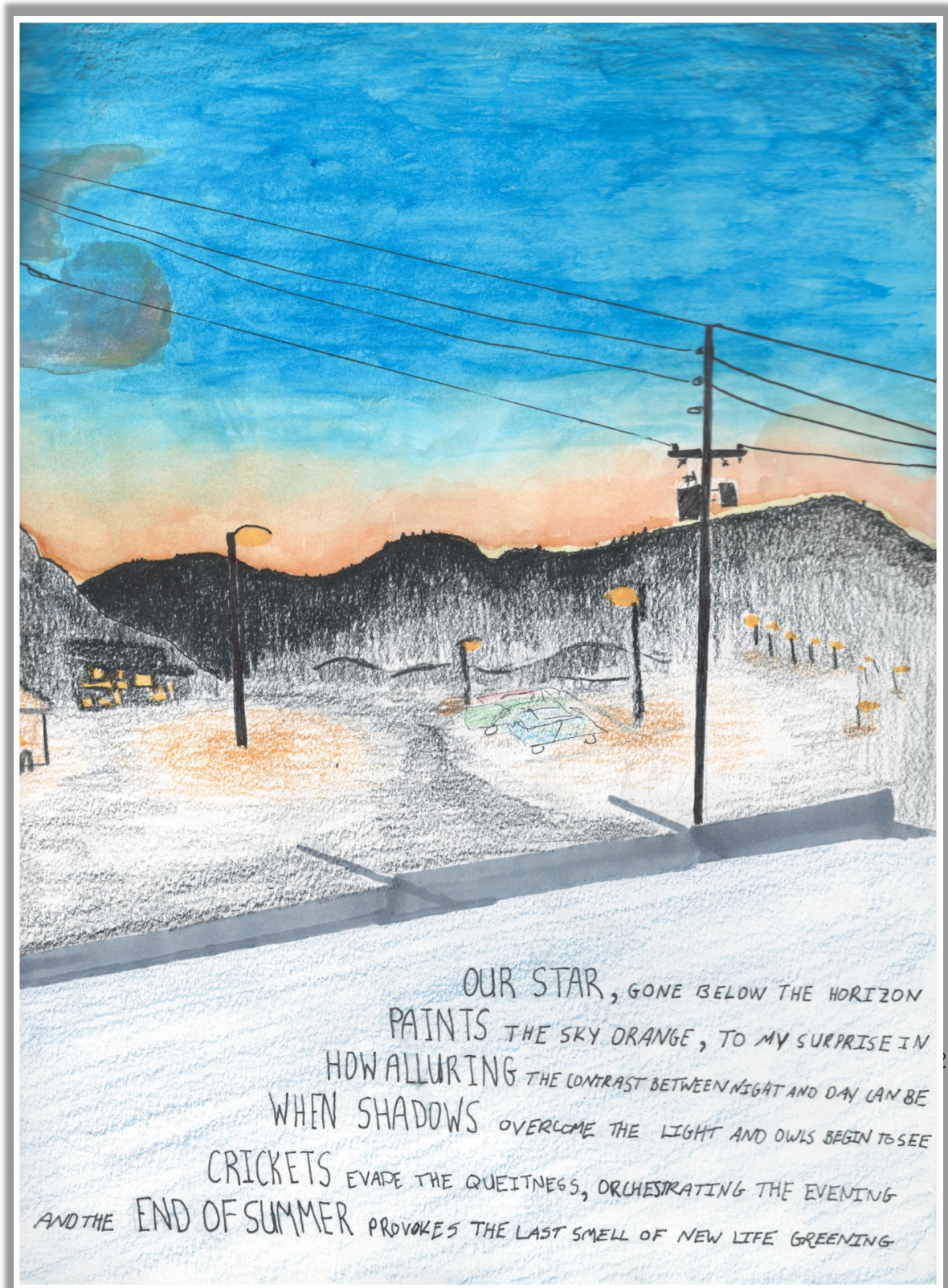
Not only *use them* [with emphasis], but embrace them; manipulate them; discover

their capabilities.

JOEY

I know what I will do...

JOEY leaves on a walk, then returns with the following -->



OUR STAR, GONE BELOW THE HORIZON
PAINTS THE SKY ORANGE, TO MY SURPRISE IN
HOW ALLURING THE CONTRAST BETWEEN NIGHT AND DAY CAN BE
WHEN SHADOWS OVERCOME THE LIGHT AND OWLS BEGIN TO SEE
CRICKETS EVADE THE QUIETNESS, ORCHESTRATING THE EVENING
AND THE END OF SUMMER PROVOKES THE LAST SMELL OF NEW LIFE GREENING

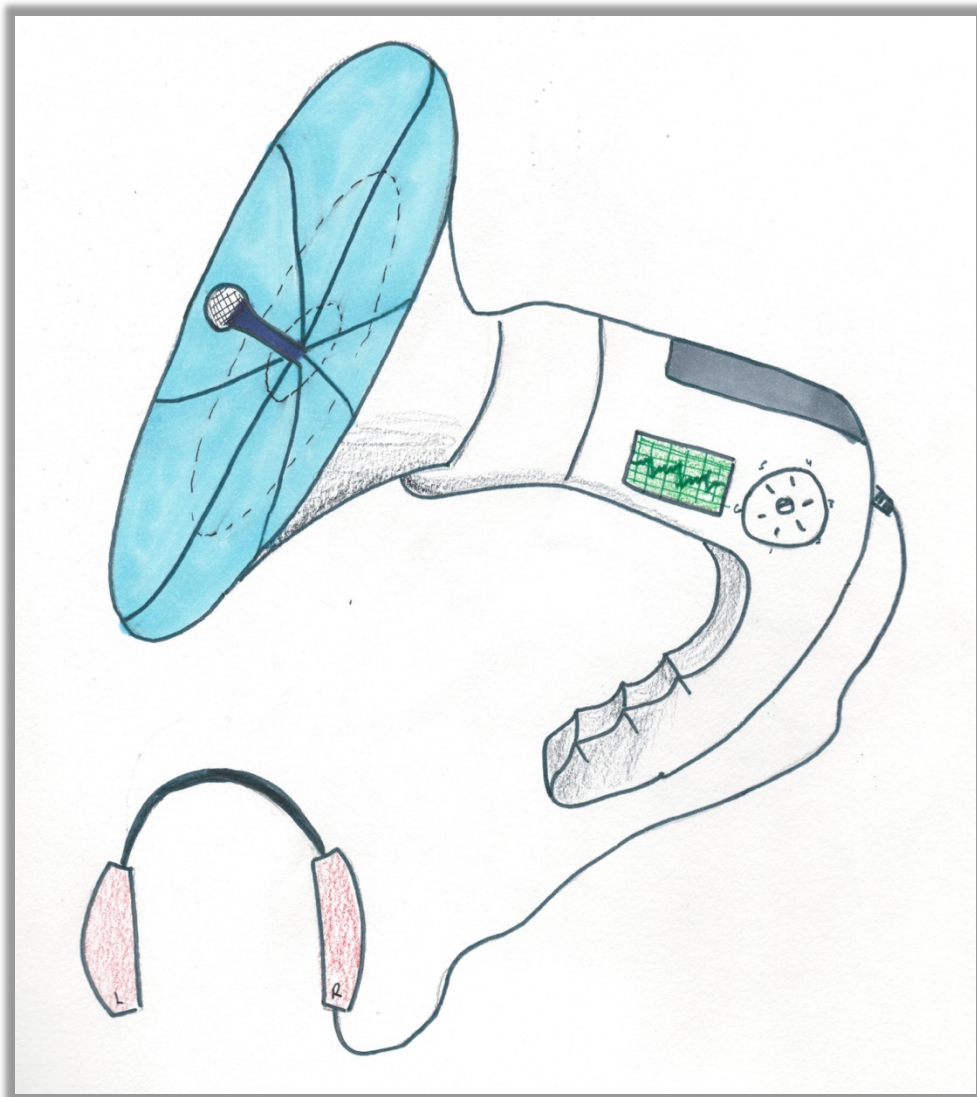
JOEY

I never knew that I could use my senses in such a developed way. It was incredible to be able to express what I experienced through art and poetry.

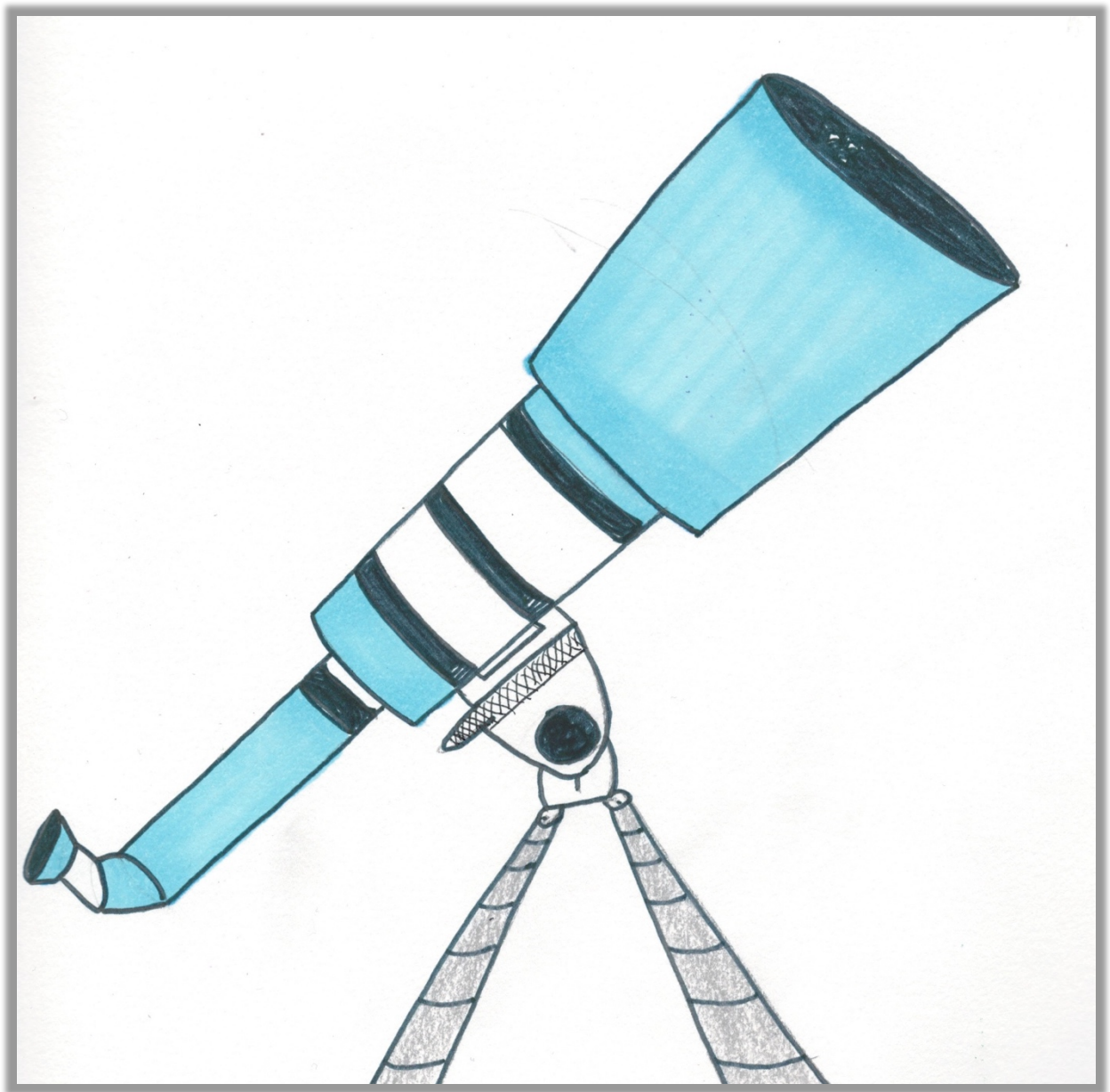
CURIOSITY

You have embraced what Lopez told you! You have truly unlocked important tools for your success as an informed and open-minded engineer.

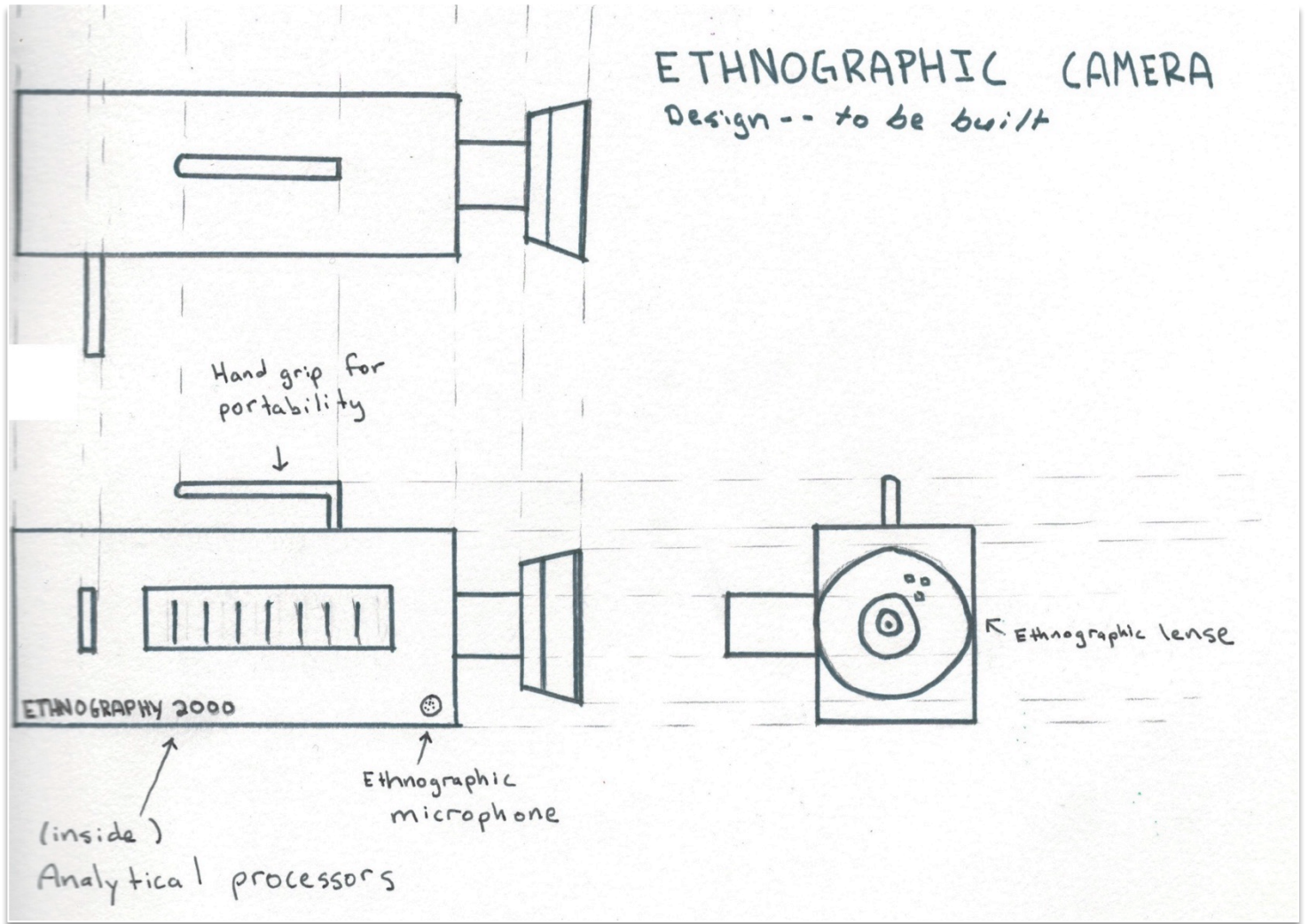
CURIOSITY pulls a veil off of a new instrument in the observatory: a sonar microphone -->



Sitting next to the sonar microphone is JOEY's telescope
-->



CURISOITY then hands JOEY an orthographic drawing. -->



JOEY

What is this? [Looking at the drawing]

CURIOSITY

These is a tool which has yet to be built. You still hold a veil of ignorance over many aspects of your senses, one being ethnography.

JOEY

This is new to me... I have never used ethnography before.

CURIOSITY

And I will show you how. But first, I would like you to try your hand at an orthographic drawing. Be curious and brave when selecting an object to draw.

JOEY

Why are orthographic drawings important?

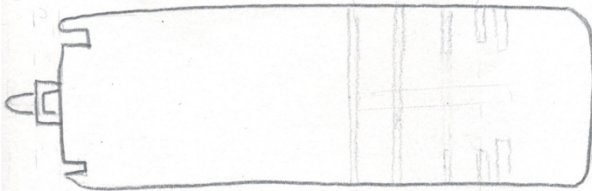
CURIOSITY

Good question, JOEY. They are important because they allow engineers to express their ideas in a specific and informative format.

JOEY gets to work drawing his own orthographic drawing:

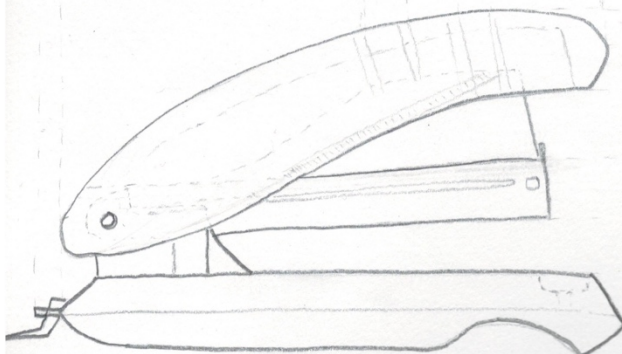
MINI-STAPLER

There is a "CASA" logo on top

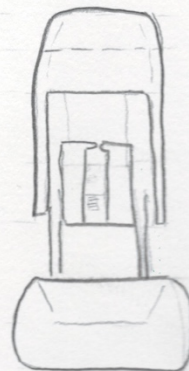


TOP

The width of this
doesn't match the
top view. Try to
work on that



SIDE



FRONT

Some lines have been removed
because the stapler is made out of
translucent plastic, and nearly every
inner mechanism can be seen

FADE OUT:

SCENE 3 - PERSPECTIVE

FADE IN:

INTERIOR LIBRARY UNDER OBSERVATORY - NIGHT



REFLECTION is sorting books and articles under candlelight.
JOEY enters.

REFLECTION

Welcome, Joey.

JOEY

Wow, this place is amazing [admiring the
shelves of books]

REFLECTION

I knew that you would discover this place-
Curiosity must have sent you. You are
welcome to peruse the books and articles.
You are sure to become enlightened.

JOEY searches the library and finds many readings that
resonate with him:

- *Lessons Amid the Rubble* by Sarah Pfattheicher
- *When it Changed* by Joanna Russ
- Who is the City For? from *Happy City* by Charles
Montgomery

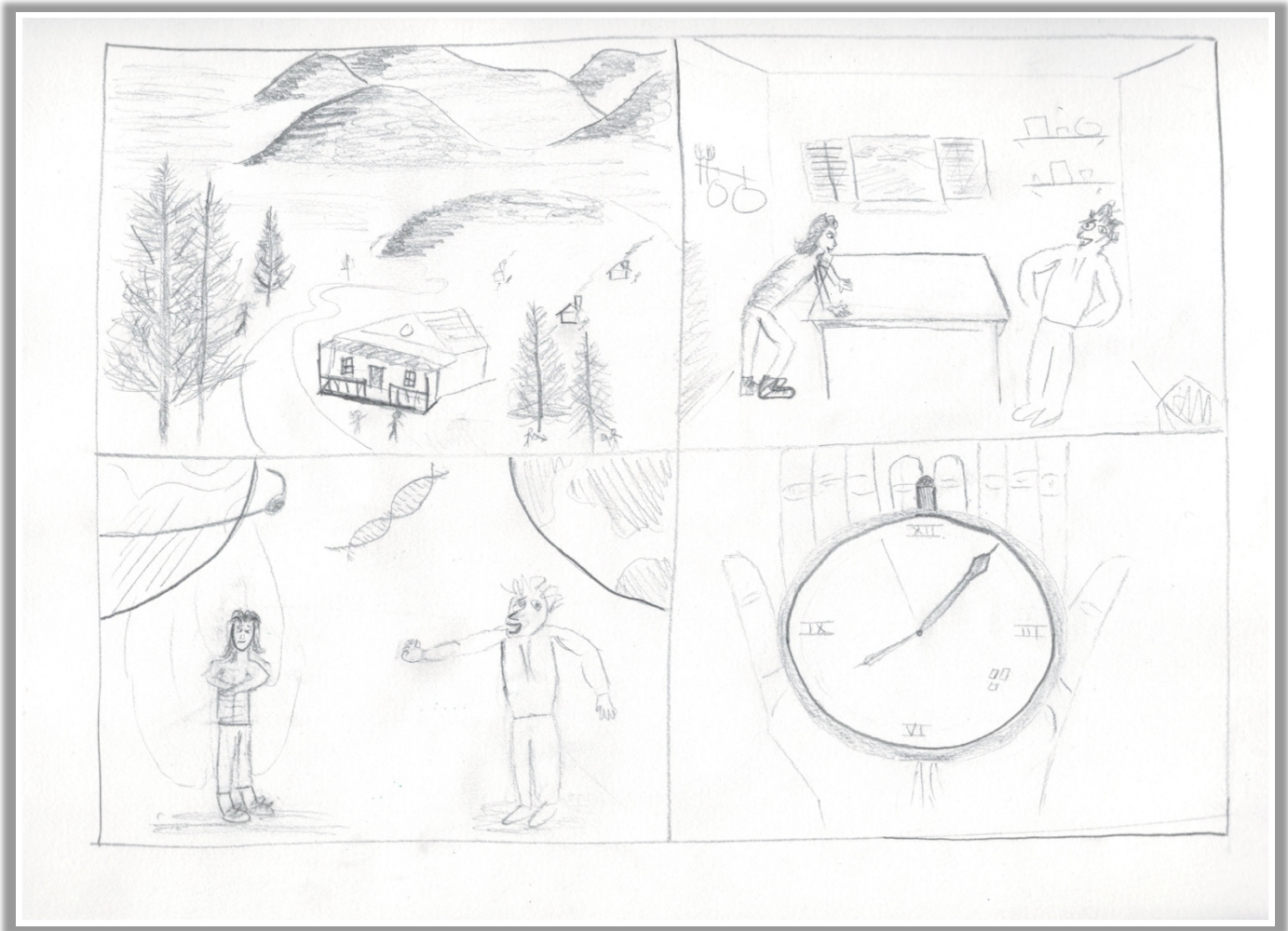
REFLECTION

I challenge you to reflect upon one of
those readings. It may give you a new
perspective on your own values.

JOEY

Okay, let me see what I can do.

JOEY chooses *When it Changed* by Joanna Russ. He draws the following:



REFLECTION

This is an interesting story board. What does each tile represent?

JOEY

The top left panel is my own sketch of the planet Whileaway. The top right panel depicts the people of Whileaway's first contact with the explorers. The bottom left panel shows the clash between the two cultures, as the explorers need the women's DNA, while the women are independent. Finally, the bottom right panel is my own representation of this story. It shows the importance of time, as well as the importance of keeping precious things such as time safe in your own hands.

REFLECTION

Wonderful. Keep what you have learned from this reflection with you as step into your next phase: design.

FADE OUT:

SCENE 4 - DESIGN

FADE IN:

INTERIOR OBSERVATORY - DAY

CREATIVITY steps out of the shadows of the edge of the observatory, into the light.

CREATIVITY

Alas, you could not keep me in the shadows this entire semester, Joey. Have you noticed me whispering in your ear?

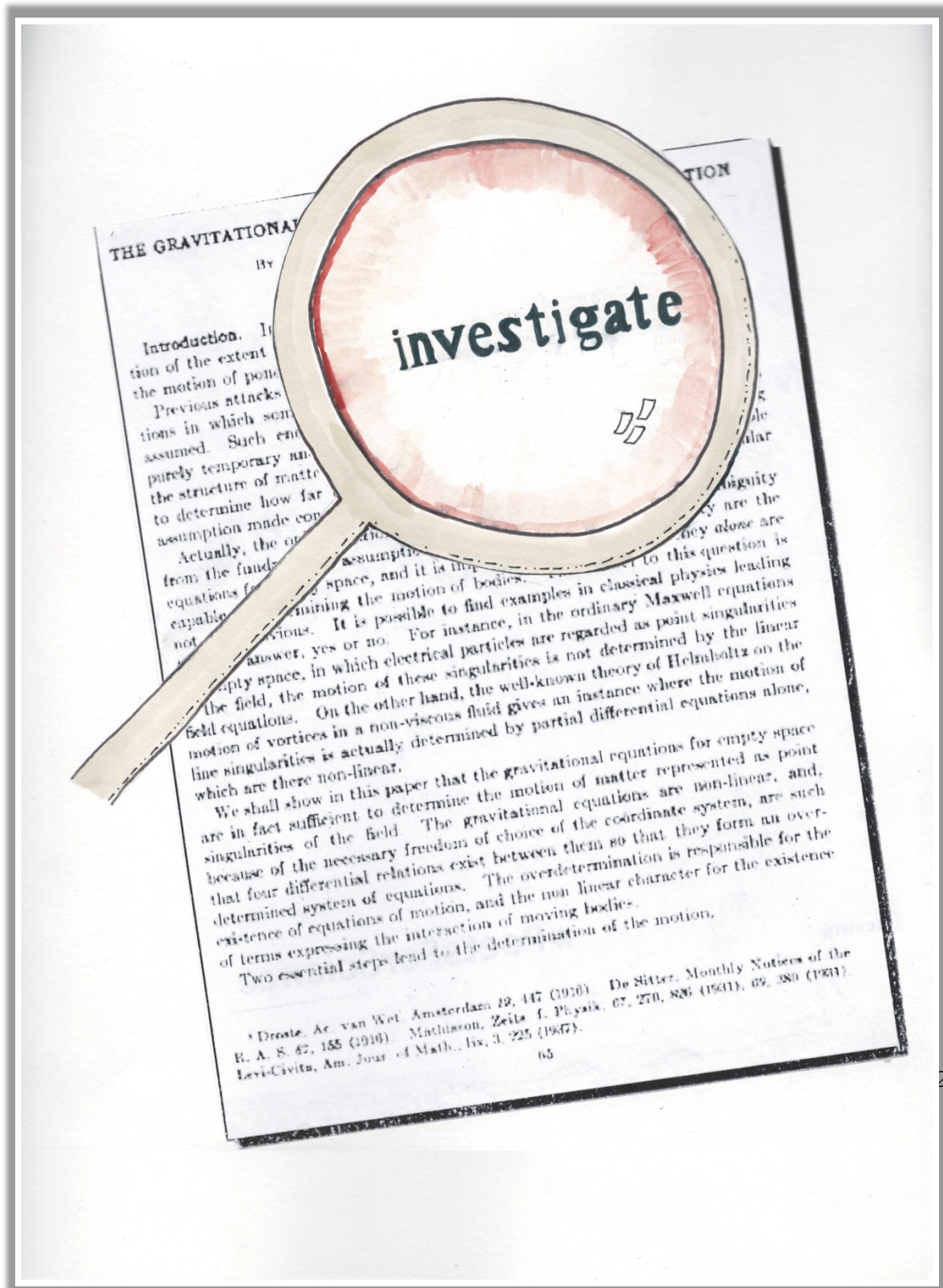
JOEY

Yes, I have. I think I am finally ready to get to know you and embrace you, Creativity.

CREATIVITY and I hug, then he grabs me by the shoulders.

CREATIVITY

Now, *create* something that is truly your own— your own spark.



CREATIVITY

What is this?

JOEY

It started as a magnifying glass, then I pasted in a section of Einstein's paper on gravitation behind it. I penned in the word investigate in the magnifying glass. This took me a long time, but it was worth the work; I love how it turned out.

CREATIVITY

Now, I have an even greater challenge. Apply that same creativity to a design charrette.

JOEY

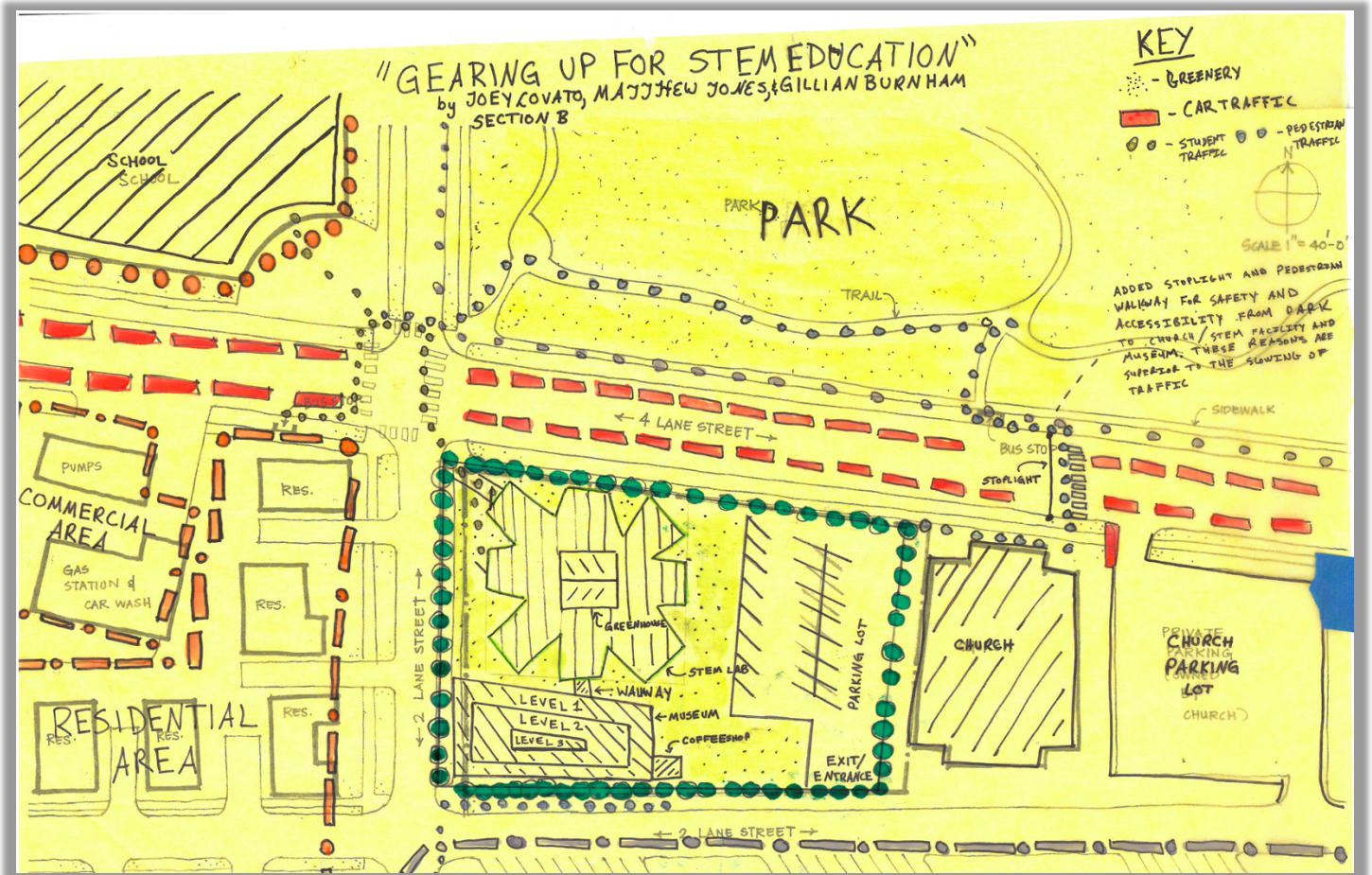
But how? Design charrettes are too fast- I don't work well under pressure.

CREATIVITY

Sometimes you must have *bias towards action*, Joey. Try your best, iterate through designs, and be creative!

JOEY

Okay, I'll do my best.



Credited to Joey Lovato, Gillian Burnham and Matthew Johnson

REFLECTION walks into the observatory, eyeing the design charrette in JOEY's hand.

REFLECTION

It looks like you have gained the ability to design and map your ideas. All good engineers can not only use their instruments, but also demonstrate what they see. Now, I am named *Reflection* for a reason. How can you reflect, redesign or further reconsider this initial design of the museum and STEM lab?

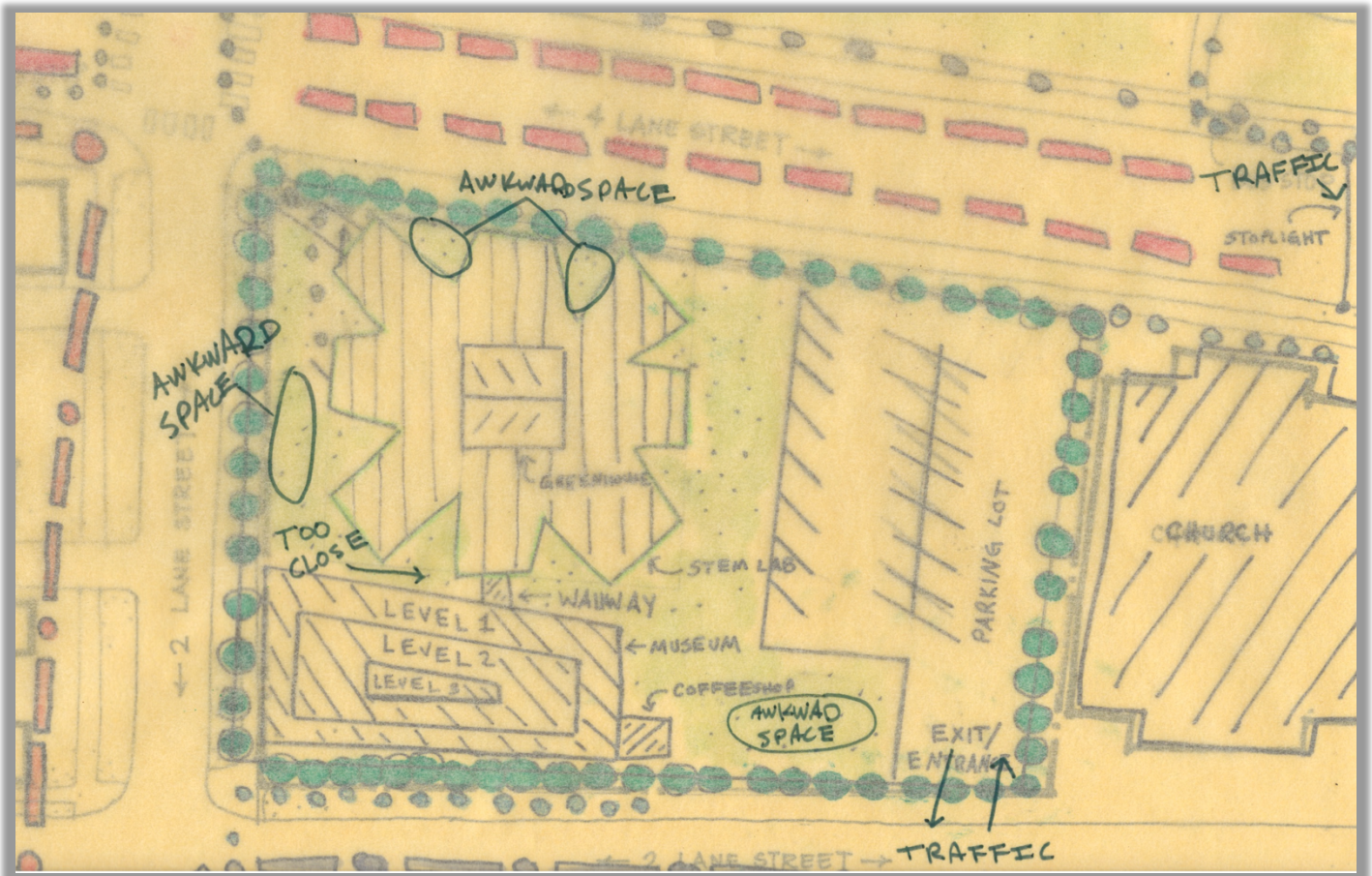
JOEY

Well, now that I look back at this design,
I am noticing a few drawbacks. Can I point
them out to you?

REFLECTION

Please!

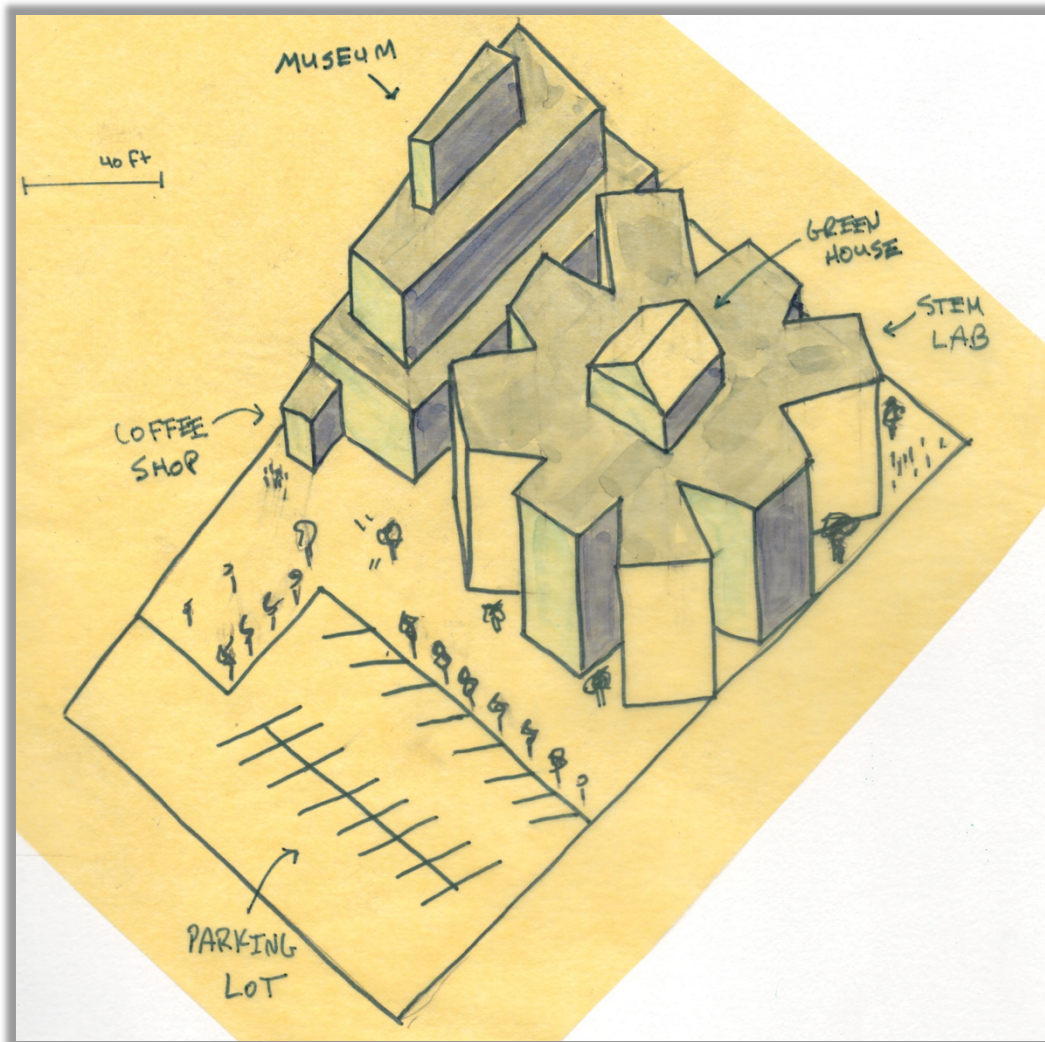
Joey begins a new overlay on the design charrette:



JOEY

As you can see, my team's initial design was important because it put the STEM lab close to the school and the parking lot close to the church. But, the museum is too close to STEM lab and there are many awkward spaces that seem useless. Also, because the parking lot is only accessible from the 2-lane street, there could easily be traffic. Similarly, the stoplight we added along the 4-lane street would cause too much congestion. You can see a few of these bugs in my axonometric drawing.

JOEY pulls out an axonometric drawing of the design:



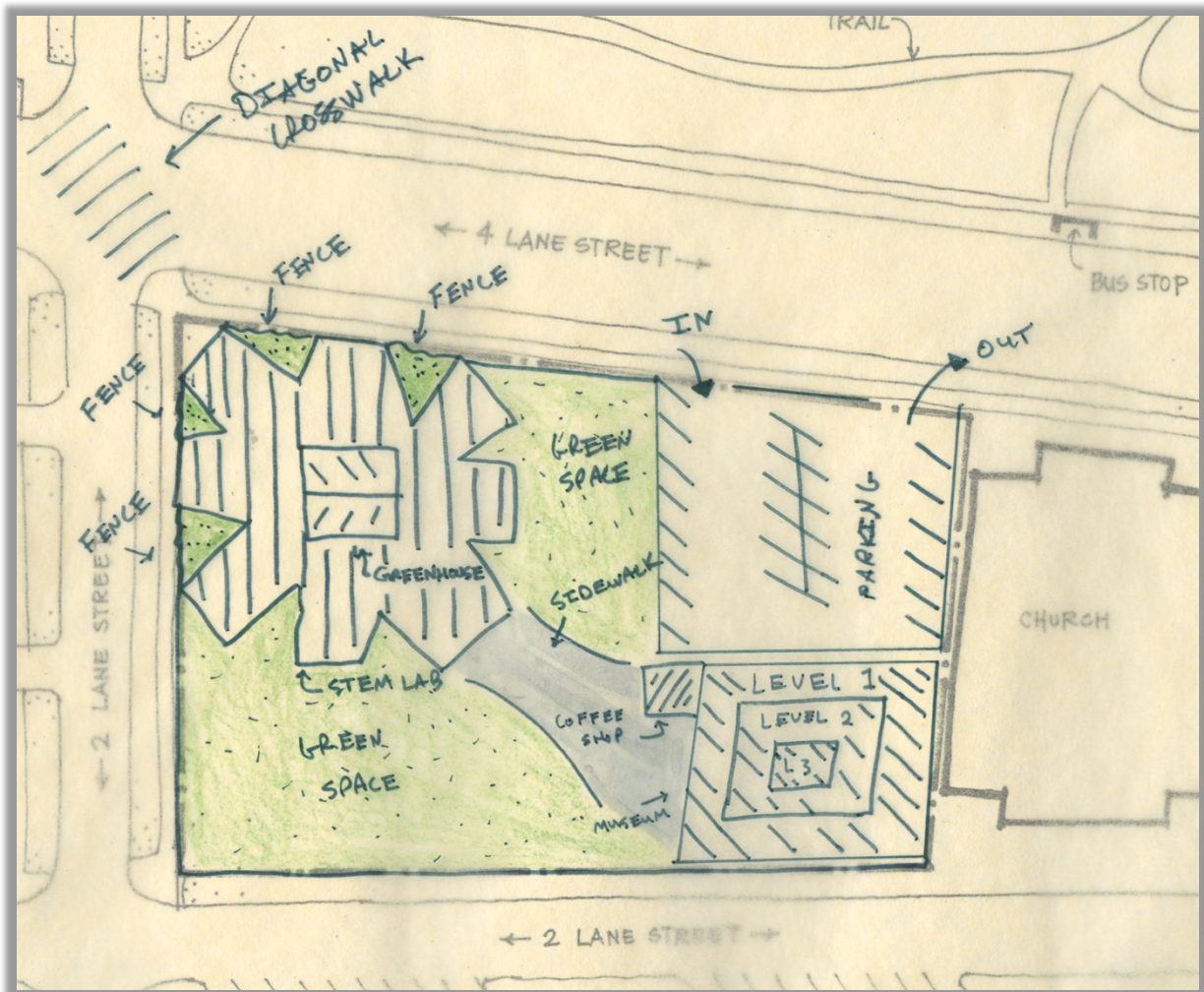
REFLECTION

Great. With this information and reflection, I'm sure that you could produce a redesign?

JOEY

Of course.

Joey reimagines the design charrette, then shows REFLECTION his work:



REFLECTION

What have you improved?

JOEY

I have rearranged our initial design in a way that leaves less useless space and doesn't cause traffic. The STEM lab is pushed to the top left corner of the empty lot and the museum is pushed to the bottom right corner. This allows the parking lot to have its entrance and exit along the 4-lane road. This also allows for a wider and more connected green space, with a sidewalk between the museum and STEM lab. I have also taken out the extra stop light and replaced it with a large diagonal cross walk between the STEM lab and school. This way, students and park-goers can cross the street simultaneously.

REFLECTION

How did you shift your values or biases?

JOEY

I shifted my focus from students and pedestrians to vehicles as well. Our first design wreaked havoc on the streets of Anytown. Now, car, student and pedestrian can all enjoy the design.

FADE OUT:

SCENE 5 - RESOLUTION

FADE IN:

INT. OBSERVATORY - DAY

CREATIVITY, CURIOSITY and REFLECTION all stand in the observatory. JOEY is using his instruments and analyzing maps.

REFLECTION

We have one last assignment for you, Joey.

JOEY

[Looking up] What is it?

CURISOITY

We want you to design a resolution to the problem you defined in Investigating Mines.

REFLECTION

You have learned much about this observatory and how to use it. Now, we would like a formal resolution to a problem... a hint of next semester.

CREATIVITY

Be creative and brave with your resolution. The obvious solution might be the easiest, but we challenge you to think of different and unorthodox ideas.

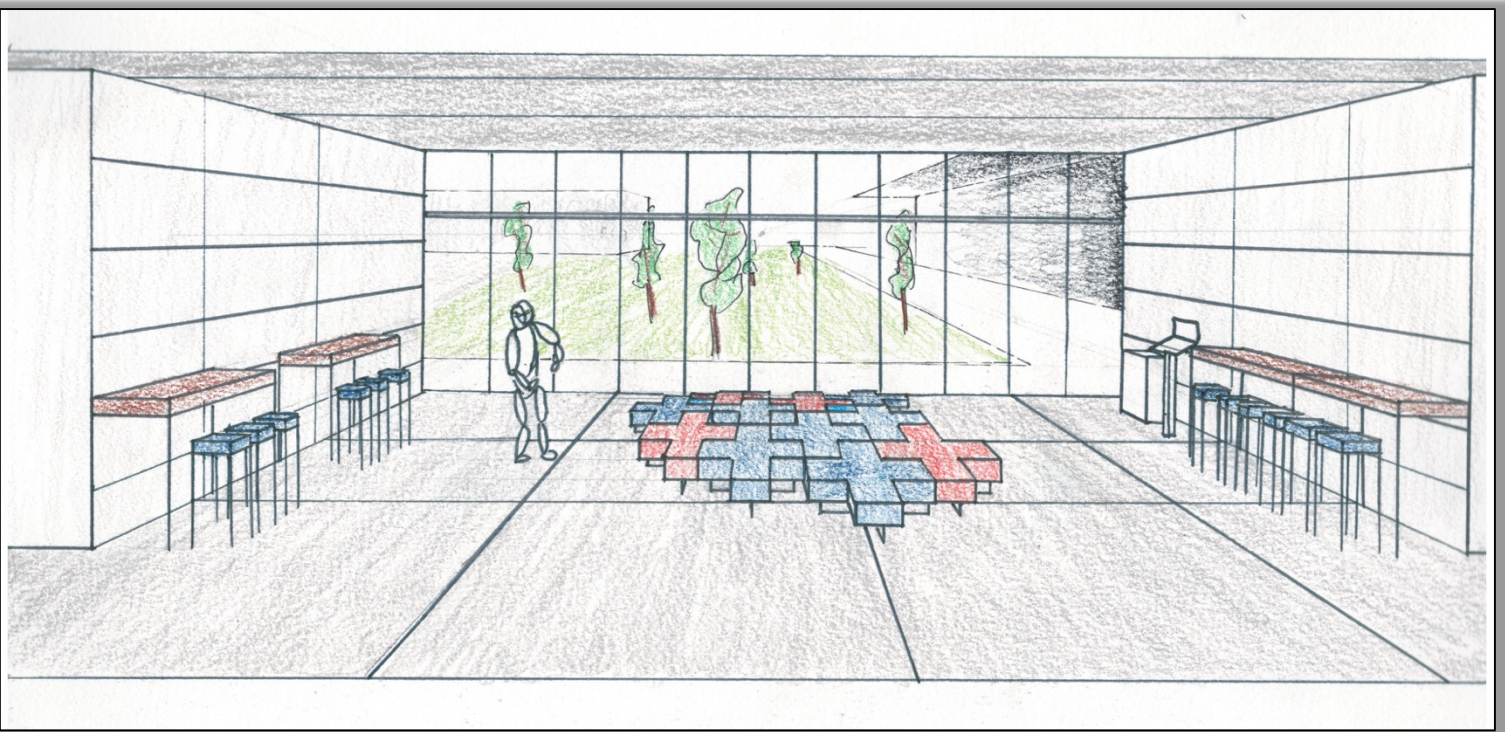
JOEY

I can do that. I'll get to work.

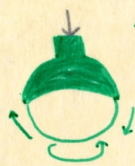
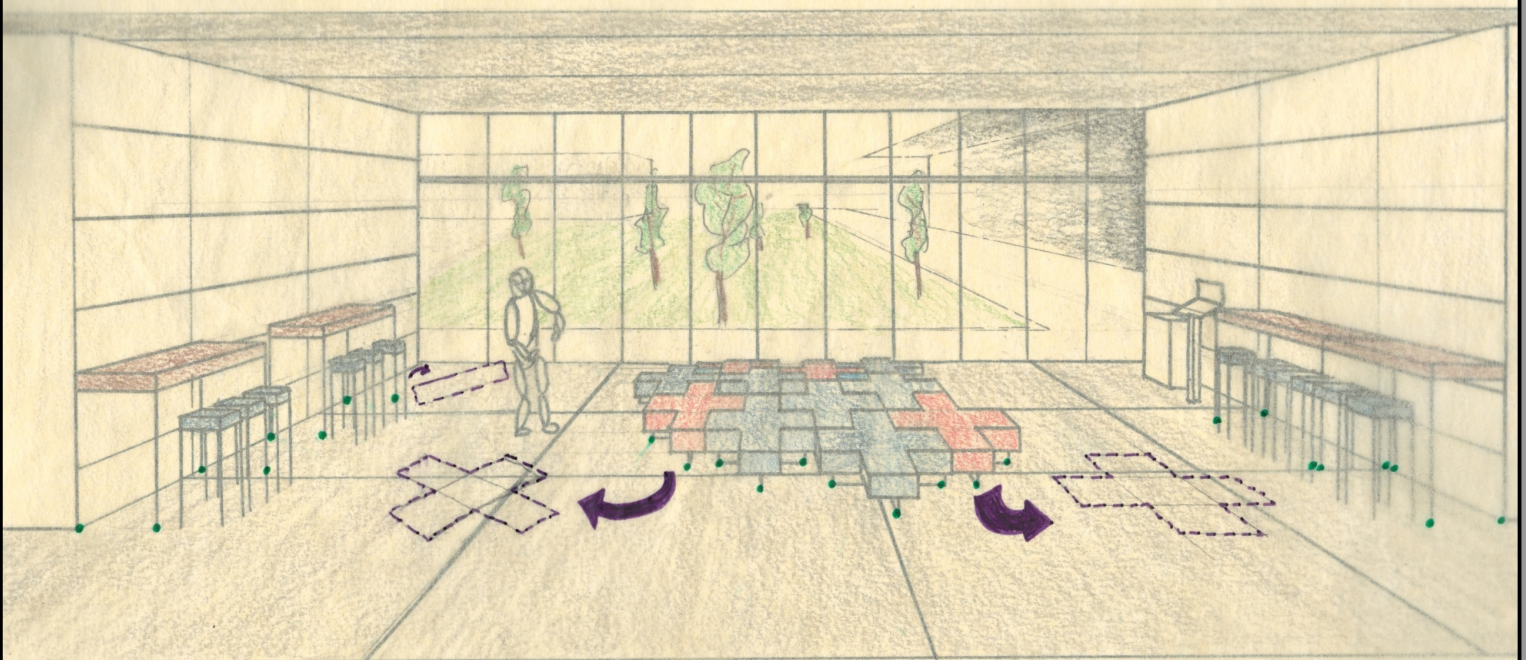
They leave JOEY alone in the observatory with maps, books and instruments around him. The night sky slowly rotates above him. By star light, JOEY produces the following -->

Investigating Mines: *Design Resolution*

My design incorporates a human discovery which shaped how we travel as a species: the wheel. The common area in Marquez incorporates many unique pieces of furniture, but they are usually stuck in place, keeping the space consistent, but inherently unimaginative. By attaching wheels to the x-shaped pieces of furniture as well as on the legs of the tables, the space can be more easily shaped and designed to be of use for many purposes. Any user group can rearrange the room with less worry that they are disrupting the original model of the space. Also, the wheels are designed to be safe, as they roll and glide with ease, but when force is applied to them from above, they stick in place. This allows people to move the furniture, but then sit on them without slippage or movement.



INVESTIGATING MINES: DESIGN RESOLUTION



"Sticky"-Wheel

A ball and socket wheel which provides easy rolling and gliding, but freezes with force from above.

• = "Sticky" - Wheel

➡ ➡ ➡ Possible movement

SELF-EVALUATION

FADE IN:

JOEY

My first semester in IDEAS was characterized initially by finding my voice. I struggled to contribute in class discussions and have honest conversations with peers, as I was masking my true voice in an effort to evade my stutter. After discovering, with the help of my professors and peers, that my stutter does not have to impede my ability to be a citizen in IDEAS, I began to participate and become more comfortable with my own voice. The Oral Presentation offered me a perfect opportunity to unveil my true voice to my team members, something that I have not done in many years. Then, for the first time in my life, I stuttered in front of my peers and professors with no veil during the presentation. It was a great step for me as I look forward to next semester. I plan to further unmask my voice to my peers in IDEAS, as *communication* will be key as we design solutions to problems in Golden.

Concerning contributions to IDEAS, I made it my goal to put in a consistent amount of effort on every assignment and activity. But, naturally, I am slow when working on assignments at this level. So, on occasion, I did not finish my IDEAS Journal prompts before class because I was focusing on small details instead of big picture ideas. My experience with the 2nd Design Charrette gave me some insight into *bias towards action*, which was shown in a scene in this featurette. Next semester, I

would like to work on deciding which assignments I would like to spend the most time on, and those that I instead need to be timelier with. This way, even though every assignment will not be perfect, I can come to class with complete entries. Concerning readings, I very much enjoyed delving into them before class and was always excited to discuss them with my peers. I am thankful that I now have many readings and perspectives from this semester in my library, from Dillard to Turchi. I plan to use and work with them next semester.

THE END

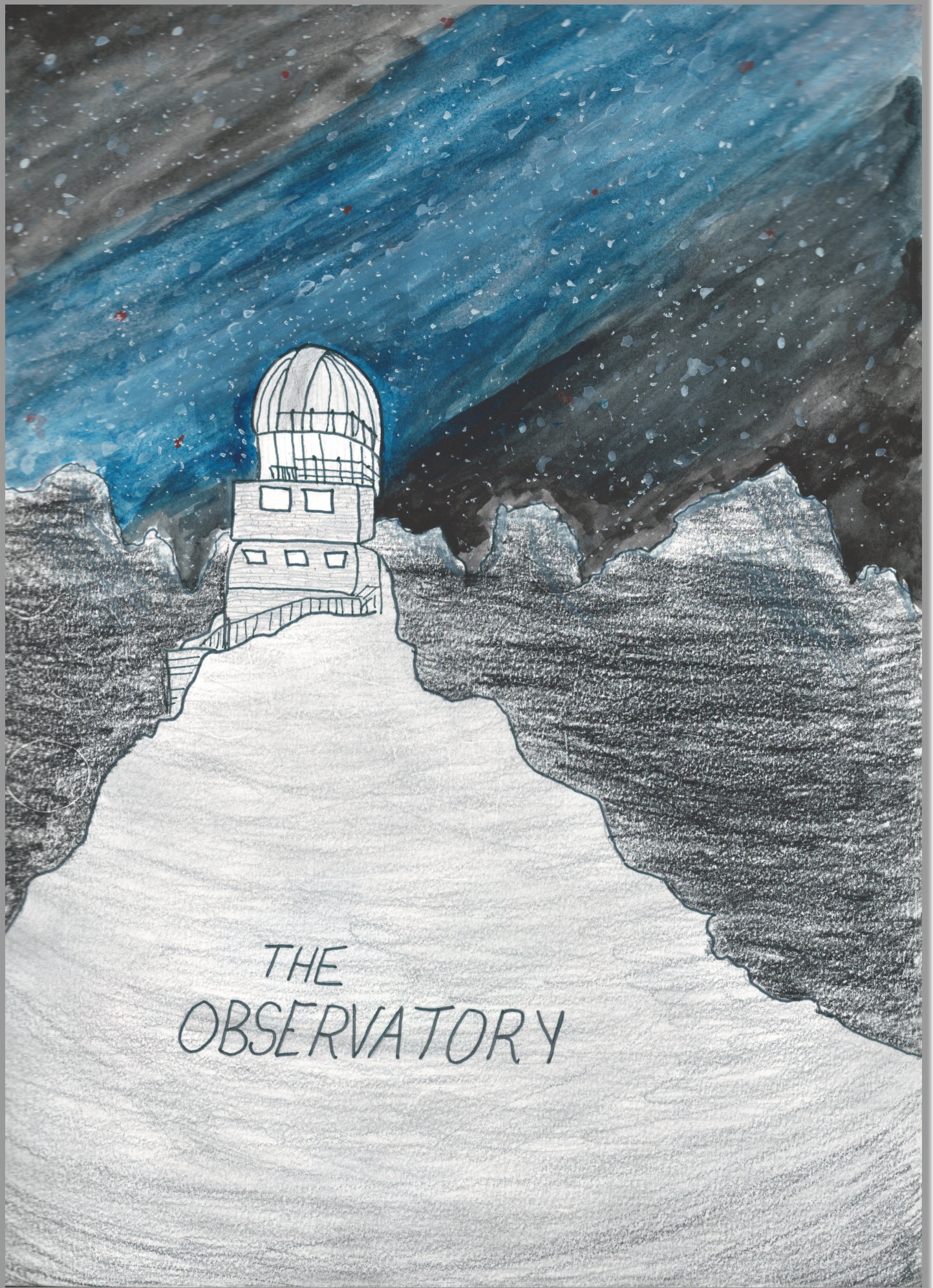
A CONCLUSIVE NOTE BY THE AUTHOR

IDEAS is both a challenging and rewarding class. The presence of the characters CURIOSITY, CREATIVITY and REFLECTION in my observatory was uncomfortable at first, but now I embrace them as I know their necessity in the work I do in IDEAS and as an educated engineer.

During this first semester of IDEAS, I was amazed by the educational value of many readings and hands-on activities. I found that HOMES 2.0 was a unique activity that allowed me to test my creative and analytical abilities within a comfortable and supportive group. It was during HOMES 2.0 that I became the closest with my peers in IDEAS. I also learned the most about value-sensitive design and the consideration of "wild cards", as I was able to work in real time with feedback from my peers and my professors.

The discussion about *The People of Sand and Slag* during class was intriguing to me, as for the first time in my STEM education, I truly saw a real and vivid example of the connection from ethics to engineering. The morality of the humans and the dog in the story gave me a glimpse into the specific field that I would like to study: artificial intelligence. The ethics of creating life artificially is both exciting and daunting to me, but with the help from cautionary tales such as *The People of Sand and Slag*, I can be more informed of the possible outcomes of my designs.

This semester has been a time for me to expand and mold my own perspective of being an engineer in the modern day. I started as an ordinary student, willing to expand my mind, but unsure of how to do so. IDEAS led me through a rigorous semester of learning how to use my observatory. My observatory and the characters within are now ready to tackle the next assignment, especially next semester when the definition of an assignment expands to a real problem which needs to be solved. I am excited to explore the logistics of transitioning my experiences this semester to solving that problem. There are new parts of the nebula which are ready to be explored, and now I am equipped with the training, education and tools to do so.



THE
OBSERVATORY